National Aeronautics and Space Administration

Space Launch System
Highlights

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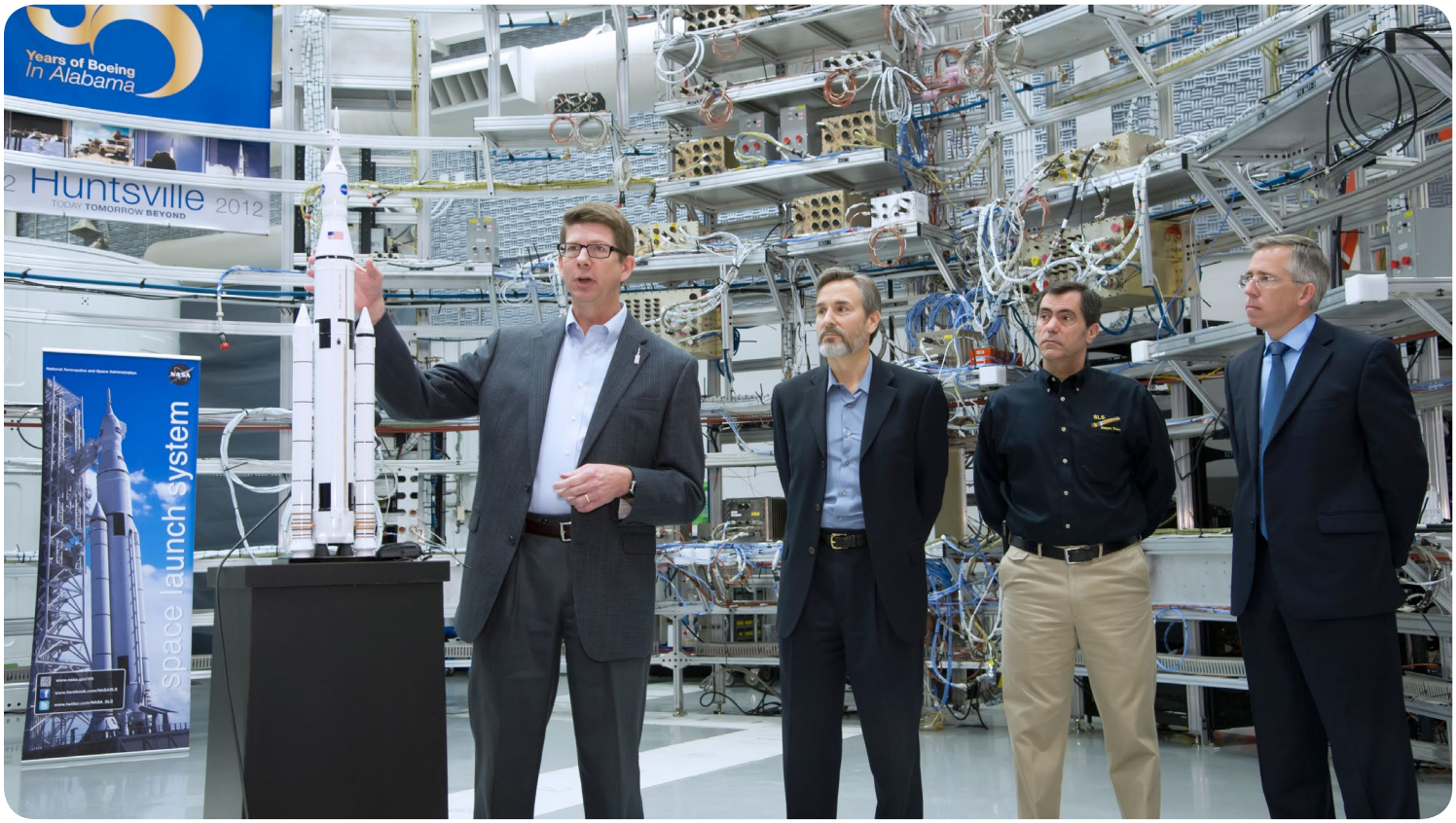
SLS Avionics System Sees the (First) Light



Dan Mitchell, at podium, SLS Integrated Avionics and Software lead engineer at NASA's Marshall Space Flight Center in Huntsville, Ala., explains during a media event how the hardware, software and operating systems for the SLS recently were integrated and powered up for an inaugural run—referred to as "first light." The avionics hardware units are arranged in flight configuration at the Systems Integration and Test Facility at Marshall and will replicate what will actually fly the rocket. NASA and Boeing engineers will test the system and run flight simulations to see how the SLS will perform during launch. In the background, from left, are Charles Dutch, Boeing avionics manager; Tony Lavoie, manager of the Stages Office at Marshall; and Frank McCall, Boeing deputy program manager. For the full story on first light, **click here**. *(Boeing)*

Spaceflight Partners: ESAB Welding & Cutting Products

EDITOR'S NOTE: Every month, SLS Highlights turns the spotlight on one of the industry partners helping to create the largest rocket ever built for human space exploration. In this issue, we profile ESAB Welding & Cutting Products of Laxa, Sweden.

The Boeing Co. selected ESAB Welding & Cutting Products as a partner in the manufacturing of fuel tank structures for the SLS. Engineers and experts from ESAB have worked with Boeing and NASA for more than a year to develop the new Vertical Assembly Center (VAC) at the agency's Michoud Assembly Facility (MAF) in New Orleans. The VAC is a giant orbital welding system that is capable of supporting the huge rocket fuel tank, while circumferentially welding its sections together with the friction-stir process. The VAC will be the largest welding machine of its type in history.

The VAC is being designed, engineered and built at the ESAB facility in Laxa, Sweden, and is supported by ESAB's North American Automation Division. The vertical tower assembly is being built in the United States using U.S. steel and component materials. For more information, visit **www.esabna.com**.

Artist illustration of the Vertical Assembly Center. (NASA/MAF)

Marshall Team Celebrates Work on Orion's First Mission

From left, John Casper, Orion special assistant for program integration and a former astronaut; Larry Gagliano, Marshall Center deputy project manager for the Orion Launch Abort System (LAS); and Brent Gaddes, Spacecraft & Payload Integration Adapter Subsystem manager at Marshall, take a look at the completed adapter for Orion's first mission, Exploration Flight Test-1 (EFT-1), in September. At an event at Marshall on Jan. 30, more than 300 Marshall and Orion team members, industry partners and other special guests celebrated the contributions the center has made toward Orion's first test flight. Along with the adapter work, the Flight Programs & Partnerships Office at Marshall provided support to the Orion program by fabricating more than 300 pieces of EFT-1 flight hardware and conducting testing of the LAS thermal protection material. *(NASA/MSFC)*

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NASA Administrator Tours Facility Where New Deep Space Rocket is Being Built

NASA Administrator Charles Bolden, center, talks about progress on the Core Stage with SLS Program Manager Todd May, right, and Michoud Assembly Facility Director Roy Malone during a tour of Michoud in New Orleans Jan. 13. *(NASA/MAF)*

With the SLS hardware in the background, NASA Administrator Charles Bolden talks to Michoud employees during a visit to the facility. Bolden was joined by U.S. Sen. David Vitter of Louisiana to observe progress made on the SLS. *(NASA)*

Marshall Team

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Also on Jan. 30, structural loads testing was completed on the prototype flight adapter at Marshall's East Test Area. For the structural loads test, the prototype was attached with lines running in different directions on the hardware. Hydraulic pressure is added to those lines in increments, which pushes on the adapter to evaluate its integrity. Twenty-five loads cases were completed during testing. To watch a video of the adapter's journey to completion, click here. *(NASA/MSFC)*

SLS Sound Suppression Testing Ramps Up at Marshall

▲ Engineers at the Marshall Space Flight Center began the first round of acoustic tests on a scale model of the SLS on Jan 16. Here, a 5-percent scale model of the SLS is ignited for five seconds to measure the affect acoustic noise and pressure have on the vehicle at liftoff. The green flame is a result of the ignition fluid that is burned along with the propellant during this short-duration test. For the full story on acoustic testing, **click here**. *(NASA/MSFC)*

Michael Martin, an InfoPro Corp. employee supporting Marshall's Test Laboratory, installs a leak check fixture on one of the liquid oxygen (LOX)/hydrogen thrusters ahead of testing on the scale model. The thrusters simulate the four RS-25 engines that will power the core stage on the SLS. *(NASA/MSFC)* ▼

Adapter Gets Astronaut's Autograph

Expedition 36 flight engineer Chris Cassidy visited Marshall on Jan. 22 following a recent five-month tour aboard the International Space Station. While at Marshall, Cassidy signed the adapter that will connect Orion to a Delta IV rocket for Orion's first mission later this year. *(NASA/MSFC)*

SLS On the Road…

SLS Assistant Program Manager Sharon Cobb, second from left, takes a tour of Southern California Braiding in Bell Gardens, Calif. The company provides cable assemblies for SLS and the Orion spacecraft. The tour was part of a Jan. 29-31 trip to the southern California area by members of the SLS and Orion programs to visit institutions and companies in the area that are providing support for the vehicles. The teams also talked to students at California State Polytechnic University about SLS. *(NASA/MSFC)*

On Jan. 31, NASA hosted a Mentor-Protégé signing agreement between The Boeing Co. and AMRO Fabricating Corp. of South El Monte, Calif., to work together in support of SLS. AMRO currently supports Boeing by manufacturing the aluminum alloy panels that make up the large barrels of the SLS core stage. The NASA Mentor-Protégé Program pairs large companies with eligible small businesses to enhance capabilities and enable them to successfully compete for larger, more complex prime contract and subcontract awards. SLS representatives taking part in the signing are Boeing SLS Vice President and Program Manager Ginger Barnes, seated second from left; SLS Assistant Program Manager Sharon Cobb, seated second from right; and David Brock, small business specialist, seated at right. *(NASA/MSFC)*

SLS Program Manager Todd May served as keynote speaker at the first Downtown Huntsville Inc. annual meeting and awards ceremony Jan. 10 at the Von Braun Center. Local organizations and individuals were honored at the event for their impact on downtown Huntsville. *(NASA/MSFC)*

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